

12: EXPLORATIONS IN TYPOLOGY

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It was when I was a psychological interne that I first read *Explorations in Personality*.¹ Even before opening the book, two things made immediate and lasting impressions: the book had *Explorations* in the title, and the seal on the jacket with the ever-present whale contained the inscription, "Let not him who seeks cease until he finds, and when he finds he shall be astonished." Then I arrived at the Harvard Psychological Clinic. (Somehow to say "Harvard" alone would be inappropriate, because life centered so much around the yellow house on Plympton Street.) Here at Henry Murray's informal seminars the foundations were laid for my future interests—T.A.T., assessment, and creativity. But, more important, here was the source of stimulation and inspiration for new explorations and new surprises. Henry Murray is thus responsible not for the results of my explorations, but the direction they have taken.

IN DEFENSE OF TYPES

In the spirit of this occasion I would like to present the beginnings of a recent exploration in which Murray's system of needs plays a central role. The venture is concerned with a topic that is currently out of fashion—typologies. Some of the reasons why they are out of fashion relate to the criticism of previously existing typologies. Others relate to the fact that, for the past several decades, psychologists have been trained in emulating the models of the physical sciences and so concern themselves with the relationships between variables. And finally, without attempting to exhaust the list of criticism, typologies are, for some, "undemocratic." Nevertheless, matters of fashion should not be permitted to stand in the way of an exploration.

¹ Henry A. Murray *et al.*, *Explorations in Personality* (New York: Oxford University Press, 1938).

The stimulus for this exploration came out of the following experiences. After completing several studies in which I was concerned with the variables that might differentiate between two groups, it was apparent that the significance of a variable in the context of one personality was somewhat different or even very different from its significance in another context. For example, let us say that need achievement was the differentiating variable. For one individual it may have an aggressive and forceful quality, whereas for another it lacks any compulsive quality and is indeed associated with playfulness and pleasure. An individual's personality is reflected not in his separate motives but in the organization of his motives. Differences of organization become important, especially if one is interested not only in understanding but in predicting behavior and is concerned with the conditions under which certain behaviors will become manifest. One way of coping with this problem is through the fullness of the case study, but this has the disadvantage of being rather cumbersome when one has to deal with large numbers of individuals. Consequently, it seemed that some compromise had to be effected between nomothetic and idiographic approaches.

Another experience that stimulated this exploration was related to assessment. In assessment, where one is concerned with the differences between groups that vary in the degree to which they achieve a criterion or standard of performance, one frequently finds that there are different ways of achieving the same criterion. For example, in differentiating between successful and unsuccessful students, one of the things that often stands out is that there are various pathways to success. One student achieves it by memorizing course content, and another learns and integrates the material. There is no single profile of *the* successful student, just as there is no profile of *the* creative individual. It is probably more accurate to say that regardless of the criterion there are several profiles of the individuals capable of achieving it. Once again, what I have said is not too startling since it is consistent with the principle of equipotentiality.

Let me continue with an observation from another area. In an experimental investigation of efficiency in problem solving, it was apparent that subjects would follow different kinds of approaches.² One subject would try to "pull the answer" out of the problem; another would "feel" his way through and appear to trust his intuition in making his decisions; and a third appeared to be hoping that through some random movements he might so manipulate the stimuli that the solution would occur to him—as indeed, for some, it would. From these observations it appeared as if one subject followed the principles of reinforcement, while another followed

² Sidney J. Blatt and Morris I. Stein, "Efficiency in Problem Solving," *Journal of Psychology*, XLVIII (1959), 193-213.

the principles of Gestalt psychology. It was also apparent that their behaviors were congruent with the different types of personalities involved, but these differences would not stand out in the final result, where only separate variables were related to the criterion.

The problem is more pervasive. We also encounter it when we survey the various theories of personality and the conflicts between theorists. Some of the diversity and conflict arises because of differences in the types of individuals studied. Maskin points out that "Freud used hysteria as the model for his therapeutic method, depression as the basis for his later theoretical conjectures. Adler's clinical demonstrations are rivalrous, ineffective, immature character types. Jung's examples were restricted to a weary, worldly, successful, middle-aged group. Rank focused upon the conflicted, frustrated, rebellious artist aspirant. Fromm's model is the man in a white collar searching for his individuality. And Sullivan's example of choice is the young catatonic schizophrenic."³ Types, then, are implicit in our theorizing; might it not be worthwhile to make them explicit and, in doing so, might we not be better able to integrate our knowledge?

TYPES BASED ON SELF-IMAGES

Because of the potential significance a knowledge of types has for both research and theory but with full awareness that types are out of fashion, this exploration was begun. Its aim was to learn whether a typological system based on self-images could satisfy, at least initially, some minimal criteria and whether it could be useful in illuminating some problems that are encountered in applying psychological knowledge. Among the minimal criteria for useful types were the following: they should be internally meaningful and consistent; they should be relatively independent of each other; they should be differentially related to other criteria; and they should have different developmental histories. Assessment methodology was selected to explore the usefulness of types.

The types are based on two different populations. One consists of a group of 116 Ph.D. chemists employed in industrial research organizations. The other is a group of eighty Peace Corps volunteers.

The group of 116 chemists, who were in their mid-thirties and came from three different industrial organizations, participated in a study of creativity. They were divided into three categories. One was a group of men regarded as "more creative" by virtue of the ratings they obtained from their superiors, peers, and subordinates. The second was a group of "less creative" men selected by the same procedure. Both groups represented approximately the upper and lower 20 per cent of the available

³ Meyer Maskin, "Adaptations of Psychoanalytic Technique in Specific Disorders," in Jules H. Masserman, ed., *Science and Psychoanalysis*, Vol. III: *Psychoanalysis and Human Values* (New York: Grune and Stratton, 1960), pp. 321-352.

chemists in their organizations. There was a "middle group" which remained undefined, and this makes up the third subgroup.

The Peace Corps volunteers consist of a group of eighty young men in their mid-twenties who were assessed for assignment to a newly developing country. All but one of them have some college education, and about half completed college. At the time they applied to the Peace Corps, they had no idea whether they would be accepted, where they would be sent, or what they would do. From the large number who had applied, eighty were screened as acceptable for further training and selection for a community development project. At the conclusion of the training program and the second stage of the screening process, sixty-two men were selected for the project. The men rejected included those who had educational difficulties or personality problems, as judged by the training and assessment staffs. After assessment, the sixty-two selected men were assigned in two-man teams to various communities where, together with a local co-worker, they would work with the local populace in building roads, schools, aqueducts. What is probably more critical, they participate in teaching the villagers how they can better their lot by virtue of their own efforts. These volunteers were studied during the training program and after they had been in the field for six months. They will continue to be studied at periodic intervals in the future.

Both populations were used to investigate the value of typology. Our explorations have not proceeded so far as to enable us to investigate all the same issues with both groups. But with both the chemist and the Peace Corps populations we inquired as to the types of individuals that made them up and the degree to which they were independent of each other. With both groups we were also interested in the relationships between the types and some criterion—creativity for the chemists and effectiveness after a six-month period for the Peace Corps volunteers. In these instances, we were especially interested in learning whether the obtained data would be consistent with the principle of equipotentiality—namely, that different types might be able to achieve the same criterion. With the chemists we inquired further into the relationships between the types and one critical antecedent factor; with the Peace Corps volunteers we inquired into some issues that arise in assessment—the problem of risk in selection and the problem of change over time in the field.

The method for obtaining the information on which the types are based is a self-description questionnaire, consisting of twenty paragraphs, each describing the manifestations of a different need after Murray. It includes the following needs: abasement, achievement, affiliation, aggression, autonomy, blamavoidance, counteraction, defendance, deference, dominance, exhibition, harmavoidance, infavoidance, nurturance, order,

play, rejection, sentience, sex, and succorance.⁴ The test was initially developed for use with the chemists, and the needs were selected because they were regarded as potential inhibitors or facilitators of creative activity. In responding to the questionnaire, the subject is asked to rank the needs from 1 to 20, from the one which is most descriptive of himself (rank of 1) to the one which is least descriptive (rank of 20).

As I have said in discussing the problems that stimulated this exploration, the functional significance of a need is dependent on the context in which it appears. It is the ranking procedure just described which makes it possible to highlight individual organizational systems. Previously I gave the example of two types of achievements—one with an aggressive and the other with a playful component. These differentiations are possible when, in one ranking, need achievement and aggression appear close together and, in the other, they are not only far apart but play is ranked close to achievement. A ranking procedure is also consistent with Murray's theoretical formulations in which he points out how needs may fuse with each other or may be subsidiary to one another. This condition might not be satisfied with other theoretical frameworks.

The potential significance of the questionnaire is based on the assumption that the picture an individual has of himself will have an effect on how he will behave. It also assumes that the twenty different needs are shared by all individuals to a greater or lesser extent and that the needs may be manifest in a variety of ways. It is further assumed that individuals vary in their need hierarchy. Theoretically, there are many ways of ranking the twenty paragraphs and many patterns are possible, although I shall consider only the nine types found in our data.

The questionnaires were administered separately to the two groups. The individual rankings of all subjects were intercorrelated in each group, and separate Q-analyses were computed. The principal components of each of the intercorrelation matrices were extracted and rotated via the Varimax method to yield simple structures. The data for the chemists yielded a five-factor solution, and the data for the Peace Corps population a four-factor solution. To arrive at a picture of the types, subjects who loaded highest on each of the factors were selected as type definers, and their mean ranking of the needs was used in establishing the need hierarchy for the type. In the chemist population 78 out of the 116 men were type-definers (26 for Type A, 16 for Type B, 13 each for Types C and D, and 10 for Type E). Out of the eighty Peace Corps volunteers, forty-six

⁴The descriptive paragraph for need abasement, as an example, is: "I passively submit to external forces. I accept injury, blame, criticism, and punishment. I surrender. I am resigned to fate. I admit my inferiorities, errors, wrong-doings, or defeats. I blame myself."

TABLE 1

NEED HIERARCHIES AMONG THE FIVE TYPES
FOUND IN THE CHEMIST POPULATION

<i>Type A</i>	<i>Type B</i>	<i>Type C</i>	<i>Type D</i>	<i>Type E</i>
Achievement	Affiliation	Achievement	Achievement	Achievement
Affiliation	Blamavoidance	Counteraction	Affiliation	Counteraction
Play	Counteraction	Autonomy	Counteraction	Affiliation
Counteraction	Order	Aggression	Order	Autonomy
Sentience	Achievement	Dominance	Nurturance	Nurturance
Dominance	Deference	Defendance	Defendance	Order
Order	Infavoidance	Rejection	Dominance	Sentience
Exhibition	Harmavoidance	Order	Exhibition	Sex
Autonomy	Nurturance	Affiliation	Autonomy	Succorance
Sex	Play	Sex	Deference	Deference
Deference	Defendance	Harmavoidance	Aggression	Dominance
Nurturance	Autonomy	Infavoidance	Play	Defendance
Harmavoidance	Abasement	Play	Harmavoidance	Infavoidance
Defendance	Sentience	Exhibition	Succorance	Blamavoidance
[Aggression]*	Sex	Blamavoidance	Infavoidance	Play
[Infavoidance]	Succorance	Sentience	Blamavoidance	Rejection
Rejection	Exhibition	Succorance	Sentience	Aggression
Blamavoidance	Rejection	Deference	Rejection	Abasement
Succorance	Dominance	Nurturance	Abasement	Harmavoidance
Abasement	Aggression	Abasement	Sex	Exhibition

* The bracketed needs represent ties.

were type-definers (19 in Type I, 12 in Type II, 10 in Type III, and 5 in Type IV). Since the order in which the needs appear in tables 1 and 2 are based on the absolute values of the needs within types, one must be cautioned that in comparing types a need may appear in the same ordinal position, although its absolute value may be different in each instance.⁵

⁵ A more complete presentation of the statistical analysis is reserved for another communication.

TABLE 2

NEED HIERARCHIES AMONG THE FOUR TYPES
FOUND IN THE PEACE CORPS POPULATION

<i>Type I</i>	<i>Type II</i>	<i>Type III</i>	<i>Type IV</i>
Affiliation	Affiliation	Achievement	Nurturance
Nurturance	Achievement	Affiliation	Play
Counteraction	Sentience	Counteraction	Sex
Achievement	Sex	Dominance	Affiliation
Deference	Autonomy	Nurturance	Autonomy
Sex	Counteraction	Order	[Sentience] *
Order	Nurturance	Exhibition	[Succorance]
Succorance	Play	Sex	Exhibition
Blamavoidance	Dominance	Deference	Counteraction
Play	Rejection	Defendance	Order
Dominance	Succorance	Play	Abasement
Harmavoidance	Order	[Aggression] *	Defendance
Infavoidance	Deference	[Autonomy]	Deference
Sentience	Blamavoidance	Sentience	Dominance
Exhibition	[Harmavoidance] *	Rejection	Infavoidance
Defendance	[Defendance]	Succorance	Achievement
Autonomy	Aggression	Harmavoidance	Blamavoidance
Rejection	Infavoidance	Abasement	Harmavoidance
Abasement	Exhibition	Infavoidance	Aggression
Aggression	Abasement	Blamavoidance	Rejection

* The bracketed needs represent ties.

In each population, eighteen needs were found to differentiate significantly among the types by analysis of variance. To condense the data and to investigate which of the needs contribute most to the uniqueness of the type, the average ranking of a need in one type was compared with its average ranking in all other types, for a total of thirty-six comparisons. Only those needs were then retained for which there were differences of one standard deviation or more in twelve or more comparisons. This analysis yielded twelve critical needs: nurturance, deference, autonomy,

aggression, blamavoidance, sentience, play, sex, dominance, achievement, exhibition, and succorance. The intercorrelations of the ranks for each of the types were calculated to investigate the degree of resemblance between types both within and between populations. Within populations there is a great deal of independence. The highest intercorrelation among the chemist types was .41, and among the Peace Corps types it was .45. Higher intercorrelations were obtained between populations, and if one selects a correlation of .80 as a criterion of identity, then it might be said that two types (II and E) are subtypes of a larger type.

TYPES AMONG INDUSTRIAL CHEMISTS

The type descriptions focus on the dynamic interrelationships between the needs, but they should be regarded with caution, for at the moment they are tentative. Complete and thorough descriptions will be possible only after more intensive study. It should be remembered, furthermore, that the type descriptions are based on self-descriptive data and hence refer to self-images; whether and to what extent these self-images are consistent with other types of personality data is an issue that will not be dealt with here. In writing these descriptions we were, however, aided by some knowledge of several individuals who were type-definers and by experience with the questionnaire administered to persons who had also taken rather complete batteries of clinical tests. To avoid the problem of "freezing" their identities in terms that might become clichés, the types are not named. As has been indicated above, the types found among the chemists are identified by letters, and those among the Peace Corps volunteers by Roman numerals.

Type A

The individuals who compose this type are achievement-oriented. But their ambitions and aspirations are not so intense that they overlook interpersonal relationships. They like to be with others and enjoy cooperating with them. They trust others and in turn are loyal to their friends. Although they may want to please others and win their affection, they are not inclined to be submissive nor are they inclined to avoid situations in which they might lose the love of others. Although their social relationships are obviously not without warmth, they are not likely to become involved with others by showing intense sympathy, nor is it very characteristic of this group to go out of its way to support or comfort others. When the occasion demands, members of this type can be critical of others without feeling that they have to be unduly sensitive to others' feelings. By the same token, members of this type do not look to other people for advice, guidance, and emotional support. Indeed, this type

ranks need succorance lower than do any of our eight other types.⁶ Although it is uncharacteristic of individuals of this type to submit passively to external forces and to surrender or resign to fate, they are not insistent upon expressing their autonomous strivings. They can accept restrictions and probably effect compromises. Among the other characteristics of persons in this group is the fact that they appear capable of accepting their libidinal strivings, and that their aggressive needs appear to be under integrative control. Unlike our other types of creative individuals but like Type IV among the Peace Corps population, the men of Type A can do things for fun and without purpose. They enjoy play and relaxation. They like to laugh, they are easygoing, and can be lighthearted and merry. These men also seek out and enjoy sensuous impressions and aesthetic feelings. Possibly it is this combination of need play and need sentience which gives the impression that members of this type may be characterized as open to new experiences. They can selectively filtrate the most important factors from these experiences and so maintain mastery and control of their environments in an orderly and organized fashion which is more flexible than constricting. All this is not to say that members of this type are without anxieties. Although the sources of their anxieties are not clear and although they may not experience very intense anxiety, it is conceivable that they may become anxious when their freedom is interfered with or when they find themselves lacking in resources to solve the problems that confront them.

Type B

The men in this group find it most important to please others and win their affection. Such behavior comes at the cost of their own spontaneity. They are so insecure that they will seek out many relationships and not be discriminating in their choice of friends. They will avoid situations in which they might lose others' love or in which they might be blamed for their actions. They are not likely to be assertive, forceful, or severe with others. Indeed, they have difficulty in dealing with their aggressive feelings. This type ranks blamavoidance higher and aggression and dominance lower than any of the other eight types. They strive to be inoffensive by avoiding hurting other people's feelings and by striving to overcome their own weaknesses. In social relationships they are likely to appear apprehensive and inhibited. Although they try to maintain their self-respect at a high level, they seem to be lacking in internal sources of evaluation. They probably function best in well-structured situations where they can tell what is required of them. These requirements they will try to fulfill in a

⁶ In a description of a type, the term "lower" refers to a rank that is closer to the least descriptive end of the continuum (toward a rank of 20) and the term "higher" refers to the most descriptive end of the continuum (toward a rank of 1).

reasonable but not necessarily outstanding fashion, for their drive to succeed is not very strong. Nor are they likely to stray far from what they know, since doing so might expose their inadequacies and possibly make them vulnerable to attack.

Type C

This type, like Type A, is also achievement-oriented. But, unlike a man in Type A who combines achievement with affiliation and play, a man in Type C is more driven, and his ambition has a more hostile quality about it. He ranks aggression higher than do any of the other eight types. Achievement may be so important to him that, when he fails in an undertaking, he returns to master it and so to demonstrate that he has few, if any, weaknesses or that he will not allow fears to stand in his way. In this sense, he may be both counteractive and counterphobic. He will be inclined to be defensive, on his guard against criticism, and argumentative in support of his own position. He is likely to perceive others as obstacles to be removed, ignored, or surpassed. He is critical and discriminating in his choice of friends, and he may well be inclined to be snobbish, disgusted, and bored with other people, rather than comforting and supportive. He ranks need nurturance lower than any of the eight other types and therefore is likely to reject others whom he regards as inferior. Because his autonomous needs are high, he is not one to bow to custom or conform to tradition. He likes to dominate situations, and he prides himself on being free and acting according to impulse. The impulses he expresses are likely to be aggressive ones. He is prone to conflict with his superiors, for he does not necessarily respect them; and he is unlikely to fulfill their requests unless he believes they foster his own ends. In this regard he is more extreme than our other types, for he ranks need deference lower than all of them. As one studies the hierarchy of needs within this type, one cannot help but gain the impression that men in this type are compensating for inferiorities and weaknesses.

Type D

The first three needs of this type are achievement, affiliation, and counteraction. Unlike Type C, however, the achievement of a man in this type is not colored by intense personal pressures; and unlike Type A, his achievement is not characterized by playfulness or enjoyment. Indeed, this type is not inclined to express his libidinous strivings. He ranks need sentience and need sex lower than do the other eight types. For a man in this group, there seems to be a moral commitment to work. In his work as in his other habits he is likely to be neat and precise, and he enjoys arranging and organizing things. Such emphasis on order protects him from criticism and blame. Members of this type do not see themselves as giving

in to external forces easily. Rather, they view themselves as controlling their environments just as they control themselves. Men in this type will work together with others in a cooperative enterprise, taking more satisfaction in the efficient accomplishment of a task, however, than in the sharing of feelings. These men are inclined to help others who need their aid. And, on such occasions, one has the impression that their aid stems more from an ethical code than from compassionate feeling. One also has the impression that they have incorporated the values of others rather than finding their own, and those which they have accepted they seek to perpetuate. An individual in this type accepts "the tried and the true," and when he does occasionally venture forth on his own, he does not deviate markedly from the *status quo*. Finally, should anyone frustrate this man's style of life, it is likely that his equanimity will be disturbed and the aggression that was previously channeled into work will be provoked.

Type E

A man of this type is achievement-oriented as are the men in Types A, C, and D. However, whereas Type A has a playful attitude in his achievement orientation and desires positions in which he can be dominant, Type E has little need to be the center of things so long as he is free to do what he wants. In contrast to Type C, who is primarily concerned with his own goals and regards others as sources of frustration, Type E is both more affiliative and more nurturant. And, whereas Type D pursues his goals by checking out the tried and the true, Type E is more inclined to accept his own hunches. Type E differs from all types (including those just mentioned) by placing more emphasis on resisting coercion and restrictions. The members of this type avoid relationships in which they might be dominated; rather, they prefer relationships which are marked by cooperation and trust. They are sympathetic persons; they will help others and not dominate them. They regard themselves as independent and free to act according to their impulses. In satisfying their impulses, however, they will not be exhibitionistic. Indeed, they rank need exhibition lower than do any of the other types. Furthermore, in being independent there is something of a serious or stable cast to their activities, for they rank need play lower than do all of the other types. Although a man in Type E is fairly well organized, the order he achieves does not stem from any attempt to impose structure on his environment, but rather from his capacity to "sense" and "feel" his environment. He enjoys these experiences and does not hesitate to follow his impressions.

These, then, are the five types we found among our 116 chemists. If they are meaningful and useful, then we should say that they differ on a variety of characteristics other than those covered by the twenty needs.

Such an investigation is currently under way, but I shall limit myself here to several points relating the types to creativity.

It will be recalled that the 116 chemists were made up of three subgroups. One was a group of "more creative" men ($N = 31$), the second was a group of "less creative" men ($N = 34$), and the third or middle group ($N = 51$) was undefined. Judgments of "more" and "less" creativity were based on ratings obtained from the men's superiors, colleagues, and subordinates. Since our type-definers in the chemist population do not include all persons studied, we also find a decrease in the number of "more" and "less" creative individuals among our type-definers. The data indicate that among the type definers there are twenty-three more creative and twenty-five less creative individuals.

The first question we may ask is how are these persons distributed among the types. We find that more and less creative men appear in all types, which is consistent with the principle of equipotentiality. Of the twenty-three more creative men, 48 per cent are of Type A, 9 per cent of Type B, 34 per cent equally divided between Types C and D, and 9 per cent of Type E. Of the less creative men, 16 per cent are of Type A, 36 per cent of Type B, 12 per cent of Type C, 24 per cent of Type D and 12 per cent of Type E. Thus, the largest proportion of more creative men appears in Type A, and the largest proportion of less creative men appears in Type B. Type A also yields a larger ratio of more creative to less creative individuals. In all the other types combined there are almost equal proportions of more and less creative subjects ($\chi^2 = 7.84, p < .02$).

In a further analysis of the data, all 116 chemists were categorized by creativity status ("more," "less," and undefined) as well as by their relative loadings on Factors A and B. Analysis of these data indicated that a significantly larger proportion of "more" creative individuals were among those men whose factor loadings were above the median on Factor A and below the median on Factor B, whereas a larger proportion of "less" creative individuals showed the reverse pattern ($\chi^2 = 18.45, p < .01$). Thus, we find a differential relationship between the types and an important aspect of behavior.

Another criterion of the meaningfulness of types is that they should be related to antecedent data and biographical information. There is much biographical information that we have on the types, which will be analyzed in the future. At present, we should like to present data on only one aspect of parent-child interaction for the two types, A and B, on which we have most data.

In attempting to understand how "more creative" individuals develop, we investigated the possibility that they were exposed to complexity early in life. One source of early complexity is the extent to which the subject perceived the mother as inconsistent in relation to himself. It was assumed

that an inconsistent mother might be frustrating to the child and that the child, to structure his own environment or to satisfy his needs, would be thrown more onto his own resources than a child reared in a consistent environment; and that this experience of using his own resources would stand him in good stead in future creative work. Obviously, one kind of experience alone would be insufficient to develop a "more creative" adult. Other conditions must also exist, but first it would be necessary to establish the importance of inconsistency.

To gather the necessary data, a questionnaire entitled "Interpersonal Relations in Childhood" was utilized. In this questionnaire subjects were asked to rate on a 7-point scale the degree of consistency or inconsistency they recall having perceived in their mother. The item read, "As a child I felt my mother was," and then the rating was to be indicated on a continuum that ranged from "very consistent" to "very inconsistent."

When the data for all the "more" ($N = 31$) and all the "less" ($N = 34$) creative men among the 116 chemists were analyzed, it was found that the former did indeed regard their mothers as less consistent ($H = 5.04$, $p = < .05$). Consequently, if inconsistency of the mother was related to creativity status, it should also differentiate between the Type A and Type B groups. Here we find a trend in the direction of the hypothesis. The Type A group does tend to rate their mothers as less consistent than does the Type B group ($H = 2.65$, $10 > p > .05$).

It was previously indicated that Types A and B differ in their relationships to creativity status. Let us now ask what is there about the A typological vector that enables individuals who load heavily on this factor to be regarded as "more creative" and what is there about the B typological vector that would limit or restrict creative activity? For the discussion of these relationships it must be borne in mind that both "more" and "less" creative groups conduct their activities in industrial research environments where they must fulfill scientific, professional, administrative, employee, and social roles.⁷ Placed in this context it soon becomes apparent that the groups are differently disposed to fulfilling their various roles, and in what follows are several suggestions that will be investigated in the future.

A Type A person, oriented to achievement and willing to cooperate with others, appears well suited to carry out his activities within the organized social system of an industrial laboratory. The fact that he trusts others probably aids him in communication. He can accept information from others and at the same time discuss his own ideas and findings with them, so that he might profit from constructive criticism. At the same time, he is not an abasive individual; he does not submit to others and probably

⁷ Morris I. Stein, "The Roles of the Industrial Researcher" (unpublished).

does not passively accept others' ideas, for he has internalized criteria for reacting to and evaluating problems. It is this same lack of submissiveness which is probably involved in his capacity to question existing data and theories. In pursuing the unknown and seeking novel accomplishments he is further aided by the fact that need play is rather high. He can engage in activities that have no immediate purpose and so can break down existing *Gestalten* into their component parts, which he studies to see how they can, through some reintegrative process, be developed into new and useful ideas. In this activity, he is also aided by his aesthetic sensitivity, which enables him to differentiate between the unnecessary or irrelevant and so arrive at more elegant solutions to problems. His behavior is goal-directed. He is not oriented to avoiding situations or being blamed for his actions; he is confident in what he does and not bothered by the ambiguity generated when an existing structure is disrupted. The fact that he is capable of impulse acceptance suggests that internal boundaries are relatively flexible, and thus they may be capable of "regression in service of the ego."⁸ He is probably motivated in his search for novelty to demonstrate his mastery and control of his environment, and what he generates in this regard he presents to others in a forceful and masterful fashion. Finally, he can assume positions of leadership where he is responsible for the activities of others.

Type A, characterized by striving and internal freedom which appear well organized and purposeful, seems to be capable of fulfilling the scientific, professional, administrative, and social roles in the industrial research organization. Members of this type would probably have difficulty, however, in fulfilling the employee role.

By contrast to Type A, consider Type B and his capacity to fulfill the role requirements. Type B appears to lack the freedom and spontaneity to disrupt existing products, processes, and ideas. Being more oriented to avoidant behavior, he is likely to find his security in what exists and will not deviate markedly from what confronts him. Consequently, he will encounter problems in fulfilling both the scientific and professional roles. In these roles he will be further incapacitated by the emphasis men of this type place on people rather than objects, theories, and ideas. Both in working on his research and in the fulfillment of the administrative role, he will encounter problems because he finds it difficult to be assertive. He might produce creative products if he were a member of a team in which another individual offered many ideas from which he could select one tenable and worthy of testing. Even under such circumstances he would require reassurance, probably frequently, that what he had done was appropriate. After several such experiences a man of this type might be

⁸ Ernst Kris, *Psychoanalytic Explorations in Art* (New York: International Universities Press, 1952).

able to go off on his own, provided he still had a supportive environment. In view of his emphasis on affiliation, his low need rejection, his blam-avoidant attitude, and his desire to make up for his shortcomings, a man of this type seems to be better suited for the fulfillment of social and employee roles.

There are too few men in Types C, D, and E to allow for much discussion. However, some speculation, which may lead to hypotheses for future test, is in order. Further study of the men in Type C may indicate that they may have difficulty fitting into an organizational framework. Their needs autonomy, aggression, and dominance may handicap them in relating to others. The intensity of their behavior also suggests that creative members of this type may "burn themselves out before their time." One might also venture the hypothesis that this group, under periods of stress, may experience psychosomatic ailments. These individuals are likely to be more capable of dealing with ideas and thus are better oriented to fulfilling the scientific role, but they will chafe at the bit when they have to fulfill social and employee roles. They will likely "drive" their subordinates and so have problems with the administrative role. And, finally, they may have difficulty in taking orders from their superiors.

Type D, with his emphasis on achievement, affiliation, order, and nurturance, may find the administrative role most to his liking. In addition, he will probably tolerate and not too grudgingly acquiesce to the employee and social roles. But, because his needs dominance and exhibition are high, he hopes not to stay in the confinement of these two roles for very long but to rise in the organization. He is well organized and probably good at translating scientific data to the company client. He lacks, however, the spontaneous and "creative" spark in the fulfillment of scientific and professional roles that is evident in Type A. It may be hypothesized that those of Type D who are regarded as creative have achieved their novel products and processes through problem solving or a trial-and-error approach.

The men of Type E will be aided in fulfilling the scientific and professional roles by their emphasis on achievement, autonomy, and their aesthetic attitude. They will also be able to fulfill the social role but are likely to get too involved with people because their needs affiliation and nurturance are rather high. This consideration would also affect them if they were in administrative positions. However, they may have difficulty in attaining these positions, since they are not very dominant or exhibitionistic. In all likelihood, it may be that they can achieve such positions in research organizations, where their superiors look for people who have valuable ideas but are not likely to push themselves forward.

These, then, are some speculations as to how and why the types may manifest differential effectiveness in fulfilling their roles, and especially

why the men of Type A may be better disposed to creative activity in industrial research organizations than are members of other types.

There are several other aspects of the relationship between creativity status and typology that should not be overlooked. As was pointed out previously, the data indicate that there is no single psychological picture of *the* individual who is regarded as more creative; more creative persons appear in all types. Future research may bring to light the different processes these individuals follow in producing novelty. Moreover, being of a type (at least insofar as self-images are concerned) does not guarantee that an individual will produce creative products. The type indicates only that individuals who make it up may possess some of the necessary conditions for creativity. There is much more to be considered about the individual and about the transactions between the individual and his environment before completely accurate predictions can be made.⁹

The data also indicated that *within* a type one finds both "more" and "less" creative individuals. This, again, may be a function of many factors. At the moment, inspection of the similarities and differences between individuals within a type suggests that the less creative individuals may be positive or negative exaggerations of the critical features of the type, or they may be conflicted about the type they represent. With regard to the matter of conflict, one must bear in mind that the types relate to self-images. Thus, it is conceivable that an individual may try to be of a type of self-image but have difficulty in carrying it off. Stating this point differently, it is suggested that in a "pure" type there is internal dynamic equilibrium. Those who are not of a pure type may be under strain. To investigate this point further, it would be critical to have additional clinical data on the types and especially to investigate the behavior of individuals who are congruent or incongruent with regard to typologies based on both clinical data and self-images.

For a typological system to have significance, as we pointed out earlier, it has to satisfy certain criteria. Thus far, utilizing the data of "more" and "less" creative individuals it has been possible to show that the types are independent and meaningfully related to significant aspects of behavior. For at least two of them it was also pointed out that they tend to differ on a critical developmental variable. Finally, several hypotheses were suggested that require further investigation.

TYPES AMONG PEACE CORPS VOLUNTEERS

The final criterion for our types is that they must enable us to cope

⁹ Morris I. Stein, "A Transactional Approach to Creativity," in C. W. Taylor, ed., *The 1955 University of Utah Research Conference on the Identification of Creative Scientific Talent* (Salt Lake City: University of Utah Press, 1956), pp. 171-181.

better with certain research problems. The problems on which it is hoped that they will cast light are in the area of assessment.

Assessment may be regarded as composed of two major phases, diagnostic and predictive. In the diagnostic phase one seeks to learn as much as one can about the individual. Using this information and, where possible, knowledge of the situation in which the individual will be placed, the assessor then attempts to predict how well the individual will perform. The prediction is not a probability statement but is first manifest in the individuals accepted and rejected and is later checked by field data. The predictive aspect is actually the risk-taking part of the assessment process. One of the problems in assessment is to know which individuals are the risks and, if they are, whether the risk is worth taking. Another problem in assessment arises after an individual has been selected for an undertaking: to what extent will he change as a result of his new experiences and in what direction will these changes occur?

The assessment of the Peace Corps volunteers provided an opportunity to investigate these problems. It will be recalled that these volunteers were a group of young men who were screened from a much larger group as having the potential for work in a newly developing country. Final decisions as to who would go overseas were made at the end of a training period. Not all those accepted for training were selected for overseas duty, so that it was possible to use acceptance-rejection rates as reflections of risk. Furthermore, since data are available on the men after they had been in the field for six months, it has been possible to inquire whether these risks were worth taking. Finally, some of the field data may also be used to learn something about the changes that have taken place in the men.

It should be pointed out that the self-description questionnaire was administered to the men at the beginning of their training and that it figured very little, if at all, in the assessment proceedings. A Q-analysis of the data yielded four types. The average rankings of these types appear in Table 2 and the description of each of them follows.

Type I

The individual in this type appears to be dedicated to other people. He enjoys being with and working with other people. In doing so, he finds greatest satisfaction in assisting helpless individuals and in supporting, comforting, and protecting others. The average rank for need nurturance in this type is higher than for all other types. A man of this type is sympathetic. He avoids hurting others and he will not be critical or severe in his interpersonal relationships. For him, need aggression is his lowest need. Compared to the others we studied, a person of this type is lowest on autonomy and highest on deference. Consequently, he appears to be one

who is relatively lacking in independence. He can be dominated by others and is likely to accept restrictions placed on his behavior. Indeed, he will strive to conform to others' wishes; when he knows what they want, he will try to fulfill their requests.

Type II

Members of this type also enjoy being with people and working with them. Unlike members of Type I, however, they place greater emphasis on need achievement. In striving to attain their goals, these men are likely to follow internal frames of reference. They believe they know what is best. They want to follow their own inclinations and in so doing would be inclined to come into conflict with authority. They are sensitive, aware of both internal needs and external stimuli. Compared to the other three types, they are more likely to seek out and enjoy sensuous impressions and to enjoy aesthetic feelings. Their average rank for need sentience is higher than for the three other types. But, since need order appears low in their hierarchy of needs, they may find themselves frustrated in utilizing their aesthetic impressions constructively. Left to their own devices, members of this type are likely to leave a situation which is not to their liking, rather than cope with the difficulties they encounter, and to seek a new environment which will give them greater satisfaction. The need hierarchy for this type correlates most highly with Type E in the chemist population. Type II differs from Type E in that he is more likely to give in to impulse expression and is lower on control features than Type E.

Type III

An individual of this type aims to get things accomplished. He enjoys working with others, but it is most important to him to be in control of the situation. Compared to the three other types, the average rank for need achievement and need dominance is highest in this type. A man of this type sees himself as confident and likes to influence others, but at the same time he is aware of others' needs and can be quite nurturant and sympathetic. He is inclined to be systematic in what he does and to accept responsibility. He is not likely to avoid situations because he might be blamed for his actions. Compared to the three other types, average rank for need blamavoidance is lowest in this type. A man of this type gives higher priority to fulfilling goals than to satisfying his impulse life. When he does satisfy his impulses, he will do so in a socially acceptable and approved manner, rarely overindulging himself, for he would not like to appear inferior. He gives the impression that he will strive to be upright and sincere in whatever he does by following a code that he has been taught.

Type IV

The top ranking need of this type is nurturance. A person in this group enjoys going to the aid of helpless individuals with whom he can be supporting and comforting. Compared to the other types of individuals, the average rank for need achievement in this group is lowest. For a member of this type, need nurturance serves the function of finding other individuals with whom he can share experiences in which impulse needs were frustrated and perhaps also the function of staving off any restriction or punishment that he might encounter for indulging his impulse needs. Need play and need sex are not only ranked high within this type but the average ranks on these needs are higher than for any other type. A man of this type is not very discriminating in his interpersonal relationships, for rejection is his lowest ranked need. Indeed, a member of this group likes to have others around him so that he can be seen and heard, can entertain and amuse. In this he also differs from the other types for, on the average, he ranks need exhibition higher than they do. At the same time, he also needs others to provide him with affection and tenderness. In this too he differs from the other types, for his average rank for need succorance is higher than the others. He will seek out others who will provide him with sympathetic understanding and possibly some direction and leadership, but not domination, for this man prides himself in not being abusive or submissive to others. He is not very well organized, for he sees organization as coercive and does not see order as allowing for freedom. Nor is he an achieving person for, compared to the other types, his average rank for need achievement is lowest. He gives the impression that he regards himself as a free soul who would be just as happy to see others go their own way too. Underneath it all he may be thankful that others are more organized, because it is through their presence that he can go off and satisfy his own impulses. Finally, if others are kindly disposed toward him and provide him with leadership in a permissive atmosphere, he will under these conditions be able to develop and achieve goals.

These, then, are the four types we found among the eighty men who were accepted for further training and selection. Let us now turn to the several questions to which we sought answers. The major question of risk is broken down into three subquestions: If an individual is of a type, what are the probabilities that he will be accepted for overseas duty? Do their anticipated problems differ from those actually experienced in the field? How effective are these types in the field? With regard to the second major question of change we inquired whether changes appeared in the men's values—specifically, authoritarian values. Answers to these questions would contribute to a better understanding of assessment procedures and some of the difficulties usually encountered therein.

It will be recalled that the type analysis was based on eighty men, forty-six of whom were type definers. The largest number of type definers (nineteen) were categorized as Type I, and approximately 80 per cent, or fifteen, were accepted. Type II contains the second largest group of type definers (twelve); half of them were accepted and half rejected. Ten men were categorized as Type III, and all were accepted. Finally, Type IV contains five men, three of whom were accepted and two rejected. In other words, if a man was of Type I or III, the probabilities were good that he would be accepted for overseas duty. However, if he was of Types II or IV, the probabilities were about equal that he would be accepted or rejected.

If one assumes a relationship between the self-images of these types and behavior during training and interview, then it is likely that members of Type I impressed the assessment staff with their affiliative and nurturant needs and the likelihood that they would be most congruent with the service orientation of the Peace Corps. Type III may have impressed the assessors with his confidence and assertiveness and the likelihood that he would be action-oriented and capable of implementing the Peace Corps program. Types II and IV may have presented more serious problems. Compared with the other types, Types II and IV rank needs related to impulse-life higher and they appear to be less socialized, less directed, and less likely to fit in with requests for conforming behavior. Since these individuals are more self-directed and given to basic need satisfaction, they do pose serious problems when one has to predict their behavior in situations about which one has relatively little information. The question is, however, was the decision to accept or reject Types II and IV made solely on the basis of whether or not the self-directed aspect of their personalities came through during the interview situation? This question we are unable to answer at the present time.

The type analysis has so far highlighted the question of potential risk for overseas duty. We shall later present data that will tell us whether these risks were worth taking. But let us first inquire into the difficulties the men said they experienced after they had been in the field for six months.

During the training period in the United States the volunteers were presented with a check list on which they could indicate the intensity with which they anticipated problems in the field (lonesomeness, living in a strange surrounding, etc.). After they had been in the field for six months, the group was asked to indicate the degree to which it had actually experienced these same difficulties. On the first administration of the test, Type I anticipates most difficulty, Types III and IV follow, and Type II anticipates least difficulty. On the second administration of the check list, after a six-month period in the field, the data of Types I, III and IV stay

relatively the same; there is no appreciable change between the intensity of their anticipated and experienced problems. However, the one type that shows the largest increase in intensity between anticipated and experienced problems is Type II ($t = 3.29$, $p = <.05$). Furthermore, the discrepancy indicates that this type of individual may underestimate the problems he might encounter in the field. These data also support the previous point that men of Type II are among the greater risks. However, the fact that a man is a risk may or may not be related to his effectiveness in the field, as we shall see.

To obtain a global measure of effectiveness in the field after a six-month period, ratings were collected from the men's supervisors on a seven-point scale ranging from 0 for "very poor" to 6 for "outstanding." A minimum of three ratings was available for each man. Analysis of the data indicates that the average (median) effectiveness ratings for Types I and III, the "least risk" types, were lower (2.75 and 2.58, respectively) than the effectiveness ratings for Types II and IV (3.25 and 4.00, respectively). Although these differences are not statistically significant, the trend is in favor of the greater risk types. One wonders, therefore, whether the Types II and IV who were rejected might not have been worthy candidates for overseas assignment.¹⁰

The last question to which we turn is, what kinds of people change while in the field and, if they do change, in what direction. An answer to this question would obviously be of value to areas other than assessment. It would be applicable to studies in therapy and to studies investigating the effects of education. In this exploration we investigated the change in values. Specifically, we inquired into the change of F-scale scores for our population of Peace Corps volunteers over a period of six months. The brief version of the F-scale, developed by Daniel J. Levinson, was administered both during training and in the field to all available Peace Corps volunteers, and the intercorrelation between the two administrations was .82. A regression equation was calculated, and the deviation between a man's actual score on the second administration and his expected score was obtained. Analysis of these data indicated that compared to all other groups Type III changes most from what one would expect. And, unlike the other three types which tend to obtain lower F-scale scores after their field experience, members of Type III tend to obtain higher F-scale scores than one would expect.

It will be recalled from the descriptions of the Peace Corps types that Type III differed from the others in several important respects. Their

¹⁰ Inspection of other data on the relationships among types, difficulty of assignment, and over-all effectiveness of those volunteers already in the field suggests that, in future research, we may learn more about the overseas conditions under which the rejected Types II and IV might have been effective.

average ranks for needs achievement and dominance were higher and their average ranks for needs play and sex were lower than those found in other types. In a sense, the men of Type III are more forceful and more action-oriented than the other persons studied. When such individuals confront a situation in which they have to wait patiently for the development of results, is it not possible that they would think how much more they could accomplish if they could have more control and be more authoritarian? Might this not also change their value system? We hope to learn more about these individuals when they are revisited and we shall be especially interested in learning whether their reactions were short-lived or whether the early changes were reinforced.

Summarizing the assessment study, it may be said that the typological analysis has highlighted those men who are potential risks and the reasons why they might be so. It has also suggested that some of these risks might have been worth taking. And, finally, it has been helpful in studying problems of change.

CONCLUSION

This completes the description of our exploration to date. As in all explorations, one cannot tell where it will finally lead. For the moment, at least, it has been helpful in integrating a body of data and in illuminating some problems. It has been possible to provide tentative descriptions of individuals, based on the dynamic interrelationships between their needs. These descriptions provide a more meaningful basis for differentiating among individuals than is provided when one focuses solely on the discrete variables on which they differ and so loses sight of the persons involved. By bringing to light the varieties of individuals who can achieve the same criterion, our exploration has cautioned us against the errors that arise from being inconsistent with the principle of equipotentiality. Finally, not only has our exploration been helpful in clarifying some problems in assessment procedures, but it has also furthered our understanding of individuals who are involved in two types of cultural change.

There is still much to be done. There is still the need to explore whether the types we found differ in behavioral characteristics other than those we considered; and there is still the need to investigate the relationships between types based on self-images and those based on other personality data. Should our efforts continue to be meaningful and productive, one cannot help wondering if they might not also be useful in other areas. Is it not possible that we could further our understanding of human behavior if we explored how different types of individuals learn, perceive, solve problems, etc.? No doubt there is much reluctance to consider typologies in the light of history, and no doubt it may be impossible to meet all

the desirable criteria for a typological system.¹¹ Avoidance of these problems, however, not only delays the development of a classification system that would foster progress in personality research, as it has in other sciences; but it also delays the integration of available knowledge. As we continue our efforts in understanding man, let us not overlook the varieties of men.¹²

¹¹ Isidor Chein, "Personality and Typology," *Journal of Social Psychology*, XVIII (1943), 89-109.

¹² Parts of this research were supported by the Carnegie Corporation and by the Peace Corps. I am grateful to John Neulinger, I. Chein, S. Schachter, and J. Colmen for their critical reactions and suggestions.